

PATENT
Attorney Docket No.: HES 2001-IP-006028UI D1
Customer No.: 000025587

III. REMARKS/ARGUMENTS

A. Status of the Application

Claims 1 – 39 are pending. Claims 1, 15, 27, 32 and 33 are amended. No claims are cancelled or added.

None of the amendments made herein is in response to the present rejection of the claims. Rather, the amendments made herein are made to enhance the Applicants' patent portfolio with claims of varying scope.

Reconsideration of this application in light of the following remarks is respectfully requested.

B. Rejection of Claims 1 – 39 under 35 U.S.C. § 103(a) over Hashimoto or Meazey

Claims 1 – 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,174,230 to Hashimoto et al. ("Hashimoto") or GB 1,093,094 to Meazey et al. ("Meazey"). This rejection is respectfully traversed.

Applicants note that Hashimoto describes a gypsum composition for use in the production of lightweight gypsum moldings (col. 1, lines 6 – 8). The gypsum composition requires "specific lightweight and spherical gypsums," allegedly developed by Hashimoto. (col. 1, lines 32 – 33). Such specific gypsums are composed of short fibers intertwined with each other. (col. 2, lines 41 – 42). A method for making such specific gypsums is described at col. 1, line 57 – col. 2, line 37, and Example 1. Hashimoto also describes including certain water-emulsifiable organic polymers with the specific gypsums, one of which is described as an "acrylonitrile-butadiene-styrene copolymer." (col. 2, lines 46 – 48; col. 3, line 10). Hashimoto requires that such polymers be emulsified in water for use in the gypsum composition. (col. 3, lines 12 – 13).

Meazey describes a cement composition that includes cement and a terpolymer, in latex form, derived from units of butadiene, styrene and acrylonitrile. (p. 1, lines 33 – 41). Meazey describes using such compositions for brick-mortar, patching old concrete, and laying concrete floors. (p. 2, lines 8 – 13.)

To sustain the present rejection of claims 1 – 39 under 35 U.S.C. § 103(a), a prima facie case of obviousness must be established. MPEP § 2142 provides that a prima facie case of

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obviousness requires three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim limitations. In the present case, neither Hashimoto nor Meazey satisfies any of the criteria set forth in MPEP § 2142 with respect to independent claims 1, 15 and 27, and the claims dependent thereon.

1. Claim 1 and Claims 2 – 14

Claim 1 is drawn to a wellbore cement composition comprising cement, acrylonitrile butadiene styrene polymer, and water. The cement composition also has the characteristic that it is suitable for introduction into a wellbore, and will set in the wellbore. Each of claims 2 – 14 depends directly or indirectly from claim 1, and therefore each includes at least the foregoing elements.

Neither Hashimoto nor Meazey discloses, motivates or suggests a wellbore cement composition that includes cement, acrylonitrile butadiene styrene polymer, and water, and that is suitable for introduction and setting in a wellbore. In addition, there is no suggestion or motivation, in Hashimoto, Meazey, or in the knowledge generally available to one of skill in the art, to modify either of Hashimoto or Meazey to provide the cement composition described in claim 1.

Hashimoto describes preparing gypsum compositions with a specific type of gypsum, namely, a lightweight, spherical gypsum composed of short fibers intertwined with each other. This specific type of gypsum was developed for the production of lightweight moldings with satisfactory mechanical strength. Meazey describes compositions for brick-mortar, patching old concrete, and laying concrete floors. There is no disclosure, suggestion, or motivation in Hashimoto or Meazey that the compositions described therein have any other uses, and in particular, no disclosure, suggestion, or motivation that the compositions could be used in a cement composition designed for introduction into and setting in a wellbore.

Those of ordinary skill in the art know that a wellbore cement composition must be suitable for introduction into a wellbore and for setting in the wellbore, and therefore should be

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sufficiently pumpable and flowable to enter the wellbore and voids in the annulus of the wellbore, and should be able to set despite elevated temperatures and pressures that are inherent in the wellbore. Accordingly, one of ordinary skill in the art would have no reason to expect that a composition as described by Hashimoto or Meazey could be suitable for introduction into a wellbore and for setting in the wellbore. For example, the mechanical strength expected of a wellbore cement composition designed for setting in a wellbore should be much greater than the mechanical strength expected of a composition designed for the preparation of lightweight molds such as described by Hashimoto. Similarly, there is no reason to expect that a composition suitable for patching old cement and concrete such as described by Meazey would be suitable for use in a wellbore. Thus, there could clearly be no motivation or expectation of success for modifying the compositions described by Hashimoto and Meazey to provide a wellbore cement composition as recited in claim 1.

Further still, in light of the different characteristics of the compositions described by Hashimoto and Meazey, and the cement composition recited in claim 1, one of ordinary skill in the art would not refer to or even be aware of the compositions described by Hashimoto and Meazey.

In view of the foregoing, Applicants respectfully submit that none of the criteria required for establishing a prima facie case of obviousness of claim 1 over either Hashimoto or Meazey has been satisfied.

Applicants further submit that a prima facie case of obviousness of claims 2 – 14 over either Hashimoto or Meazey has not been established for at least the same reasons that apply to claim 1. Applicants also note, however, that claims 2 – 14 are drawn to subject matter that is not disclosed, motivated or suggested by Hashimoto or Meazey. For example, the amounts of polybutadiene and styrene-butadiene recited in claims 4 – 6 and the particle sizes recited in claims 8 – 11 with respect to the acrylonitrile butadiene styrene polymer, are not disclosed, motivated or suggested by Hashimoto or Meazey. Applicants note that Hashimoto requires an emulsified form of polymer and Meazey requires a latex form of polymer. Neither discloses, motivates or suggests using a polymer having a particle size as recited in the present claims.

In view of the foregoing, Applicants respectfully request that the rejection of claims 1 – 14 under 35 USC §103(a) over Hashimoto and over Meazey be withdrawn.

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2. Claim 15 and Claims 16 – 26

Claim 15 is drawn to a wellbore cement composition comprising cement, acrylonitrile butadiene styrene polymer present in a range of 5% to 30% by weight of the cement, and water. Each of claims 16 – 26 depends directly or indirectly from claim 15, and therefore each includes at least the foregoing elements.

As discussed above with respect to claims 1 – 14, neither Hashimoto nor Mezey discloses, motivates or suggests a wellbore cement composition that includes cement, acrylonitrile butadiene styrene polymer, and water, nor is there suggestion or motivation, either in the references or in the knowledge generally available to one of skill in the art, to modify the references to provide such a cement composition.

Also as discussed above, there is no disclosure, motivation or suggestion in Hashimoto or Mezey for modifying the composition of Hashimoto or Mezey, nor would there be a reasonable expectation of success that a modification of Hashimoto or Mezey could provide a wellbore cement composition that includes acrylonitrile butadiene styrene polymer in a range of 5% to 30% by weight of the cement.

In view of the foregoing, Applicants respectfully submit that none of the criteria required for establishing a prima facie case of obviousness of claim 15 over Hashimoto or over Mezey has been satisfied.

Applicants further submit that a prima facie case of obviousness of claims 16 – 26 over either of Hashimoto or Mezey has not been established for at least the same reasons that apply to claim 15. Applicants also note, however, that claims 16 – 26 are drawn to subject matter that is not disclosed, motivated or suggested by Hashimoto or Mezey.

For example, the amounts of polybutadiene and styrene-butadiene recited in claims 17 – 19, and the particle sizes recited in claims 20 – 22 with respect to the acrylonitrile butadiene styrene polymer, are not disclosed, motivated or suggested by Hashimoto or Mezey.

In view of the foregoing, Applicants respectfully request that the rejection of claims 15 – 26 under 35 USC §103 over Hashimoto or over Mezey be withdrawn.

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3. Claim 27 and Claims 28 – 39

Claim 27 is drawn to a wellbore cement composition comprising cement, acrylonitrile butadiene styrene polymer and water, wherein the acrylonitrile butadiene styrene polymer has a particle size of less than 1 mm.

Each of claims 28 – 39 depends directly or indirectly from claim 27, and therefore each includes at least the foregoing elements.

As discussed above with respect to claims 1 – 14, neither Hashimoto nor Meazey discloses, motivates or suggests a wellbore cement composition that includes cement, acrylonitrile butadiene styrene polymer, and water, nor is there disclosure, suggestion or motivation, either Hashimoto or in the knowledge generally available to one of skill in the art, to modify Hashimoto or Meazey to provide such a wellbore cement composition.

In addition, neither of Hashimoto or Meazey discloses, motivates or suggests a wellbore cement composition that includes an acrylonitrile butadiene styrene polymer having a particle size of less than 1 mm. In fact, the composition described by Hashimoto requires an emulsified form of polymer, and the composition described by Meazey requires a latex form of polymer. Particle size is not even mentioned by Hashimoto or Meazey, and therefore neither can disclose, motivate or suggest a wellbore cement composition that includes a polymer having a particle size as recited in claim 27.

In view of the foregoing, Applicants respectfully submit that none of the criteria required for establishing a prima facie case of obviousness of claim 27 over Hashimoto has been satisfied.

Applicants further submit that a prima facie case of obviousness of claims 28 – 39 over Hashimoto has not been established for at least the same reasons that apply to claim 27. Applicants also note, however, that claims 28 – 39 are drawn to subject matter that is not disclosed, motivated or suggested by Hashimoto.

For example, the amounts of polybutadiene and styrene-butadiene recited in claims 29 – 31, and the particle sizes recited in claims 34 – 36 with respect to the acrylonitrile butadiene styrene polymer, are not disclosed, motivated or suggested by Hashimoto.

In view of the foregoing, Applicants respectfully request that the rejection of claims 27 – 39 over Hashimoto be withdrawn.

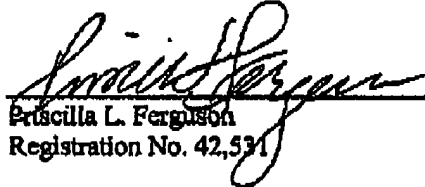
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Conclusion

Claims 1 – 39 are now pending in the present application. In view of the foregoing remarks, allowance of claims 1 – 39 is respectfully requested. The examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

Respectfully submitted,

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Priscilla L. Ferguson
Registration No. 42,531

HAYNES AND BOONE, LLP
901 Main Street, Suite 3100
Dallas, Texas 75202 3789
Telephone: 214-651-5662
Facsimile: 214-200-0853
E-Mail: ipdocketing@haynesboone.com
D-1398979_1